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Indianapolis, IN 46204				
EXAMINER				
WEIER, ANTHONY J				
ART UNIT		PAPER NUMBER		
1781				
NOTIFICATION DATE		DELIVERY MODE		
10/25/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/725,039

Applicant(s)

SOERENSEN ET AL.

Examiner

Anthony Weier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-10, 13-16, 18-24, 26-29, 58, 59 and 66-74 is/are pending in the application.
- 4a) Of the above claim(s) 58, 59 and 66-73 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10, 13-16, 18-24, 26-29 and 74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/1/10
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains withdrawn claims 58, 59, and 66-73 drawn to an invention nonelected with traverse in the reply filed on 4/28/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-7, 14, 21, 22, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuentevilla.

Fuentevilla discloses a plant for continuous hydrolysis of a protein containing raw material (e.g. fish) and application of said products by way of packaging for commercial use. More specifically, Fuentevilla discloses a hydrolysis area (e.g. digester with tubular tanks and pipes), an inactivation area (preheater with steam), and separation area wherein the treated material is separated into solid and liquid portions by separating screens wherein it is inherent that said that at least separated outlets for the liquid and solids (as called for in instant claim 11) are present (e.g. Abstract; cols. 2 and 3). It is further expected that the digester therein , agitator, etc. would naturally be

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capable of maintaining any emulsion therein from reaching a certain size by the limited space of the closed system therein.

Said claims further call for a collection area wherein pieces of protein-containing material are collected and provided to the hydrolysis area. However, the pump and pipes used to introduce the fish material into the first digesting vessel of Fuentevilla inherently act as a collecting area for same. In the alternative, Fuentevilla discloses introduction of a fragmented raw material which would indicate apparatus employed to reduce the size of same (as called for in claim 22) and that same would inherently provide a collection area for said material whether this is a vessel or pipe.

Although it is noted that some of the claims (e.g. claims 3-7) appear to be related to method steps, the instant claims are apparatus claims and the manner in which a machine is to be utilized is not germane to the issue of patentability of the machine itself. In re Otto, 136 USPQ 458. Nevertheless, it is asserted that the system of Fuentevilla is capable of housing an emulsion as called for in any one of claims 3-7. In addition, it is noted that the claims further call for treatment of material of a certain emulsion amount. It should be, again, that the instant claims are all directed to an apparatus and that it is expected that apparatus of Fuentevilla reads on the instant claims regardless of such limitations to the material being worked on.

The claims now further recite that the apparatus operates in a continuous non-batch mode *without interruption* and *for at least three days* (e.g. claim 1). However, due to the reference of processing in a continuous fashion in

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Fuentevilla (e.g. Abstract, etc.), it is inherent that the apparatus would allow for processing in a continuous fashion for extended periods of time. In addition, during those periods when same is operated in continuous mode it is expected that during a period time therein same operates in an even manner as called for in the instant claims (considering, for example, even a few seconds period of time during the non-batch mode when same is operating in a feed forward format). Although Fuentevilla does not specifically articulate that the apparatus is run without interruption for at least three days in continuous non-batch mode, Fuentevilla does make it clear that same may occur for "extended periods" and three days would certainly fall within "an extended period" (col. 7, lines 3-11).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-8, 14, 18, 20-24, 26-29, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla.

The claims further call for slanted filter screens. Although Fuentevilla discloses the use of vibrating separating screens to remove solids from liquids, it is silent regarding whether or not said screens are slanted. However, devices employing slanted screens are notoriously well known, and, absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the

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art at the time of the invention to have included same as a matter of preference depending on the cost of screens available or the availability of same.

Claim 18 further calls for an agitator used adjacent the outlet of the inactivation reactor that suspends solid material in the reaction mixture. It should be noted that the vibrating separating screens in Fuentevilla would provide such function. However, it is not clear how far the screens exist from the inactivation reactor. Nevertheless, such determination, absent a showing of unexpected results, would have been well within the purview of a skilled artisan, and it would have been further obvious to have provided same adjacent to the outlet as a matter of preference for example, to provide a system which occupies less space.

The claims further call for the inclusion of a pump to move material from the inactivation area and toward the separation area. Although Fuentevilla is silent regarding the means used to move separated materials following the digester, pumps are notoriously well known for transfer of material, and it would have been further obvious to have employed such means as a matter of preference for its common use as a transferring means for liquid material.

Claims 23, 24, and 26-29 call for the apparatus to be capable of hydrolyzing a certain amount of material for a certain time and to yield a certain amount of product, respectively. It is not clear that Fuentevilla is capable of providing such specific amounts. However, such determination as to the size, processing time, and product yield would have been well within the purview of a skilled artisan, and, it would have been further obvious to have arrived at such amounts as a

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matter of preference depending on the amount of material to be treated and the processing speed/time desired and to have provided an apparatus to achieve said amounts through routine experimental optimization of other apparatus variables.

With regard to claims 1, 4-7, 14, 21, 22, and 74, it is shown that Fuentevilla does not inherently encompass the extended period of operation of "at least three days", it would have been obvious to one having ordinary skill in the art to have modified the apparatus using better parts or more durable material to facilitate operating for such extended period of time. Operating efficiently for a longer period of time without cleaning breaks would provide more productivity and greater economic value; such motivation would have been well within the purview of a skilled engineer designing and running such an apparatus.

6. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with DE 2526879.

The claims further call for the hydrolysis and inactivation areas to possess at least one feeder screw for conveying the reaction mixture there through. Although Fuentevilla is silent regarding same, it is well known to employ screw conveyors in reaction chambers as taught, for example, by DE 2526879 which also involves apparatus used to hydrolyze fish and separate same into different end products. It would have been obvious to one having ordinary skill in the art at the time of the invention to have included the rotating screw conveyor of DE 2526879 to convey material through portions of the hydrolysis apparatus (e.g.

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digester) as a matter of preference in convey said material. Moreover, the use of the screw conveyor would provide the added benefit of mixing, therefore, enhancing or quickening the hydrolyzing process.

The claims further call for the use of a second and third screw to facilitate movement of material in other parts of the apparatus. It would have been further obvious to have employed such extra screw conveyors to provide more consistency of movement throughout the whole system.

7. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with FR 2352498 or Fuentevilla taken together with DE 2526879 (as in paragraph 9 above) and FR 2352498.

Fuentevilla is silent regarding the use of a centrifuge to separate the liquid portion into two fractions. However, it is well known to employ centrifugation to separation liquids into different fractions. For example, FR 2352498 discloses enzymatic hydrolysis of fish with separation of liquid from solid and further separation of the liquids therein by centrifugation (see Figure). It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed centrifugation in separation of liquids as way to attain, for example, fats and oils. It is noted that instant claim 9 further calls for such apparatus to be used to separation water-soluble protein from water-insoluble proteins, and it is expected that the centrifuge used in the modified apparatus of Fuentevilla would be capable of providing such separation due to the recitation of FR 2352498 to remove oils and inherently therein oil-soluble material.

The claims further call for the inclusion of a pump to move said oil away from the reaction mixture. Although both Fuentevilla and FR 2352498 are silent regarding the means used to move separated materials from the reaction mixture, pumps are notoriously well known for transfer of liquid material, and it would have been further obvious to have employed such means as a matter of preference for its common use as a liquid transferring means.

The claims further call for a collection area wherein pieces of protein material are collected and then provided to the hydrolysis area. FR 2352498 further teaches the use of a feeder (10) which not only collects material to be digested but serves to convey same to the digester itself. It would have been further obvious to have incorporated such collecting and conveying means as a conventional feeding means as a matter of preference depending on costs involved, space considerations, etc.

Claim 83 calls for the use of a decanter for separating fatty fractions. Although FR 2352498 teaches the use of a centrifuge for achieving same, it is well known to use decanting as a less complicated, cheaper alternative method for separation, and it would have been further obvious to have incorporated same as a conventional alternative separating means as a matter of preference depending on the cost involved or the equipment available.

8. Claims 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuentevilla taken together with DE2526879 and either one of MacKenzie or Eweson.

The claims call for a feeder screw that reverses rotation during certain periods of time. It should be noted that reaction vessels employ feed screws (out or in) that have the ability to reverse rotation as taught, for example, by either one of MacKenzie or Eweson. It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed such reverse action in the screw conveyor used to aid in feeding of material into the vessel as well as feeding same out of the vessel into another location as taught, for example, by Eweson (col. 3, lines 36-43) or to enable movement of material that may get caught or stuck in the vessel as taught, for example, by MacKenzie (col. 5, lines 1-10).

Response to Arguments

9. Applicant's arguments filed 10/1/10 have been fully considered, and, other than the rejection under 35 USC 112, 1st paragraph (now withdrawn), said arguments are not persuasive.

In particular, Applicant argues that Fuentevilla teaches the use of at least two interconnected hydrolyzing vessels and the requirement that the contents therein are transferred by pump between each vessel contrary to the instant claims requiring a hydrolysis area. The instant claims do not exclude the use of more than one vessel (by use of the terminology "comprising" in the preamble) and do not define the "hydrolysis area" in such manner that same contains only one vessel. Moreover, even if "the hydrolysis area" of the instant claims was claimed in such manner to exclude more than one vessel, claim 1 as a whole, for example, still calls for an apparatus "comprising" different elements which leaves

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open the presence of additional "hydrolysis areas" or vessels for performing same.

Applicant additionally argues that Fuentevilla neither discloses nor implies an inactivation area which substantially inactivates at least one enzyme in the reaction mixture. Although it is agreed that Fuentevilla does not expressly articulate an inactivation area, same inherently exists as material passes through the preheater with steam as set forth in the rejections above.

Applicant argues that Fuentevilla teaches discharge from the hydrolysis area in a batch wise manner contrary to the claimed continuous non-batch mode called for in the instant claims within the hydrolysis, inactivation, and separating areas. Although Fuentevilla discloses the term "batch" in referring portions of material processed, Fuentevilla makes clear that the entire operation is conducted in continuous steady state mode (e.g. Abstract; col. 1, lines 6-17 and 36-48; col. 7, lines 3-11). Fuentevilla further makes a distinction that the continuous processing employed therein avoids the requirement of determining the viscosity of material treated in arriving at the strength of agitation associated with *batch processing* (col. 6, line 68 – col. 7, line 2).

Applicant argues that Fuentevilla discloses only one example of processing at a length of 30 hours prior to cleaning which falls short of the "at least three days" limitation now set forth in claims 1 and 74. It should be noted that this limitation has been addressed in the rejection above. Furthermore, the 30 hour example is only illustrative and not limiting to the intended length of operation. Fuentevilla specifically sets forth that apparatus is "capable of running

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continuously for extended periods" (col. 7, lines 3-6) and further discloses that "the system can be modified....thereby permitting the operation to run continuously for an indefinite period of time" (col. 7, lines 6-11). Same further suggests that even if the apparatus of Fuentevilla is not able to operate for a particular amount of time, it can be modified to allow for same by including other vessels which provide a temporary detour yet allow the operation to continue to run continuously.

Applicant argues that Fuentevilla employs agitators with different rates, variable speed pumps, and bi-directional processing contrary to the instant claimed invention. However, Fuentevilla employs an overall continuous mode of processing as discussed above, and the instant claims not exclude the presence of such apparatus components to achieve the overall solution of continuous treatment. Although Applicant does recite problems with the apparatus of Fuentevilla (page 13 of Applicant's Response filed 10/1/10), the claims as presently recited do not distinguish by specific limitations an apparatus which differs from that of Fuentevilla. In other words, most of the instant claims are broad enough, as presently recited, to encompass the apparatus, albeit complicated, of Fuentevilla.

All other arguments have been addressed in view of the rejections as set forth above.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Weier whose telephone number is 571-272-1409. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Weier
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Art Unit 1781

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Anthony Weier
October 20, 2010